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10/042,823	11/13/2001	John Gardner	10015462-1	7322

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EXAMINER

MARTIN, LAURA E

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,823

Applicant(s)

GARDNER ET AL.

Examiner

Laura E. Martin

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 43 is rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki (US 6234606).

Suzuki et al. discloses a plurality of ink pens including at least one dark color pen and at least one light color pen, wherein said dark color and light color ink pens are not both centered along an axis parallel to a scanning direction associated with the printing device (figure 1, element 526A-526G, column 4, lines 39-58).

Claim 44 is rejected under 35 U.S.C. 102(e) as being anticipated by Ylitalo (US 20020122106).

Ylitalo teaches a method for use in a printing device comprising: determining dot gain requirements; and selectively altering an ink application order based on said determined dot gain requirements [0018].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 7, 11-18, 21-24, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (US 6540329) in view of Wyble (US 6322187).

Kankeo discloses:

As per claim 1: a selectable dark dot gain print mode method for use in a color printer, the dark dot gain print mode method comprising: selectively applying at least one dark color to a dry portion of a print media and selectively applying at least one light color ink to the portion of the print media following the application of the at least one dark color (column 9, lines 39-62).

As per claim 2: a method wherein the at least one dark color ink has more colorant than said at least one light color ink (example 1; column 27, line 1-column 28, line 57).

As per claim 3: a method wherein said at least one dark color is selected from a group of color inks comprising of black, dark magenta, and dark cyan (column 9, line 39-62) and said at least one light color is selected from a group of color inks comprising yellow, light magenta, and light cyan (column 16, lines 10-48).

As per claim 4, an object definition print mode method for use in a color ink jet printer, the object definition print mode comprising: selectively applying at least one light

color ink to a dry portion of a print media (column 9, lines 24-38), only subsequently selectively applying at least one dark color to said portion of said print media following said application of said at least one light color ink (column 6, line 64-column 7, line 1).

As per claim 5: a method wherein the at least one dark color ink has more colorant than said at least one light color ink (example 1; column 27, line 1-column 28, line 57).

As per claim 6: a method wherein said at least one dark color is selected from a group of color inks comprising of black, dark magenta, and dark cyan (column 9, line 39-62) and said at least one light color is selected from a group of color inks comprising yellow, light magenta, and light cyan (column 16, lines 10-48).

As per claim 7: an adaptable print mode method for use in a color ink jet printer the adaptable mode comprising: selecting between at least two print modes comprising a dark dot gain print mode and an object definition print mode (it would have been obvious to one of ordinary skill in the art at the time of the invention that if there were two modes of printing, one must be selected), wherein a selectable dark dot gain print mode method for use in a color printer, the dark dot gain print mode method comprising: selectively applying at least one dark color to a dry portion of a print media and selectively applying at least one light color ink to the portion of the print media following the application of the at least one dark color (column 9, lines 39-62), and an object definition print mode method for use in a color ink jet printer, the object definition print mode comprising: selectively applying at least one light color ink to a dry portion of a print media (column 9, lines 24-38), only subsequently selectively applying at least one

Art Unit: 2853

dark color to said portion of said print media following said application of said at least one light color ink (column 6, line 64-column 7, line 1).

As per claim 11: a method wherein the at least one dark color ink has more colorant than said at least one light color ink (example 1; column 27, line 1-column 28, line 57).

As per claim 12: a method wherein said at least one dark color is selected from a group of color inks comprising of black, dark magenta, and dark cyan (column 9, line 39-62) and said at least one light color is selected from a group of color inks comprising yellow, light magenta, and light cyan (column 16, lines 10-48).

As per claim 13: a method comprising selectively ordering a sequential application of at least two marking materials that are to be applied to a print media based on the amount of colorant associated with each of the two markings (column 9, lines 24-62).

As per claim 14: a method wherein said marking materials include liquid inks (column 9, lines 24-62).

As per claim 15: a method wherein selectively ordering said sequential application of said at least two marking materials based on said amount of colorant associated with each of said at least two marking materials includes: selectively ordering that a first one of said at least two marking materials having a first amount of colorant is applied to said print media prior to a second one of said at least two marking materials having a second amount of colorant, wherein said first amount of colorant is

greater than said second amount of colorant (column 9, lines 24-62 and column 27, line 1- column 28, line 57).

As per claim 16: a method wherein selectively ordering said sequential application of said at least two marking materials based on said amount of colorant associated with each of said at least two marking materials includes: selectively ordering that a first one of said at least two marking materials having a first amount of colorant is applied to said print media prior to a second one of said at least two marking materials having a second amount of colorant, wherein said second amount of colorant is greater than said first amount of colorant (column 9, lines 24-62 and column 27, line 1- column 28, line 57).

As per claim 17: a method wherein selectively ordering said sequential application of said at least two marking materials based on said amount of colorant associated with each of said at least two marking materials includes: associating said sequential application of said at least two marking materials with at least two different printing passes to be conducted over an applicable portion of said print media (column 6, lines 25-44).

As per claim 18: a method wherein the applicable portion is associated with a single pixel (figures 12A-12G).

As per claim 21: a method providing a print map that indicates said selectively ordering of said sequential application of said at least two marking materials (figure 21A-21D).

As per claim 22: a method sequentially applying said at least two marking materials to said print media based on said print map (column 29, lines 34-53 and figures 21A-21D).

As per claim 23: a method sequentially applying said at least two marking materials to said print media based on said print map includes causing at least two ink-jet pens to apply liquid ink marking materials to said print media based on said print map during a multi-pass printing process (column 29, lines 34-53 and figures 21A-21D).

As per claim 24: a printing device comprising an ink jet printing mechanism configureable to selectively apply at least two different color inks to the print media, a selectable dark dot gain print mode method for use in a color printer, the dark dot gain print mode method comprising: selectively applying at least one dark color to a dry portion of a print media and selectively applying at least one light color ink to the portion of the print media following the application of the at least one dark color (column 9, lines 39-62), and an object definition print mode method for use in a color ink jet printer, the object definition print mode comprising: selectively applying at least one light color ink to a dry portion of a print media (column 9, lines 24-38), only subsequently selectively applying at least one dark color to said portion of said print media following said application of said at least one light color ink (column 6, line 64-column 7, line 1).

As per claim 28: a method wherein the at least one dark color ink has more colorant than said at least one light color ink (example 1; column 27, line 1-column 28, line 57).

As per claim 29: a method wherein said at least one dark color is selected from a group of color inks comprising of black, dark magenta, and dark cyan (column 9, line 39-62) and said at least one light color is selected from a group of color inks comprising yellow, light magenta, and light cyan (column 16, lines 10-48).

Kankeo fails to disclose:

As per claim 1: printing the at least one light color to the portion of the media that is still wet.

As per claim 4: printing the at least one dark color to the portion of the media that is still wet.

As per claim 7: printing the at least one dark color one light color to the portion of the media that is still wet.

As per claim 24: logic operatively coupled to said ink jet printing mechanism and configured to select between at least two print modes, and printing the at least one dark color one light color to the portion of the media that is still wet.

Wyble discloses:

As per claim 1: printing the at least one light color to the portion of the media that is still wet (column 4, lines 24-25).

As per claim 4: printing the at least one dark color to the portion of the media that is still wet (column 4, lines 24-25).

As per claim 7: printing the at least one dark color one light color to the portion of the media that is still wet (column 4, lines 24-25).

As per claim 24: logic operatively coupled to said ink jet printing mechanism and configured to select between at least two print modes (column 9, line 66-column 10, line 7), and printing the at least one dark color one light color to the portion of the media that is still wet (column 4, lines 24-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the methods taught by Kaneko et al. with the disclosure of Wyble in order to improve print quality and provide photorealistic images.

Claims 8, 9, 19, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (US 6540329) and Wyble (US 6322187), and further in view of Matsubara (US 5488398).

Kaneko et al. and Wyble do not disclose:

As per claims 8 and 25: a method wherein selecting between said at least two print modes includes selecting one of said at least two print modes based on the content to be printed.

As per claims 9, 19, and 26: a method wherein selecting between at least two print modes includes selecting on of said at least two print modes based on at least one parameter associated with the inks.

Matsubara discloses:

As per claims 8 and 25: a method wherein selecting between said at least two print modes includes selecting one of said at least two print modes based on the content to be printed (column 4, lines 7-12).

As per claims 9, 19, and 26: a method wherein selecting between at least two print modes includes selecting on of said at least two print modes based on at least one parameter associated with the inks (column 4, lines 7-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the methods of Kaneko et al. as modified with the disclosure of Matsubara in order to create a higher quality image and a printer with higher quality means of control.

Claims 10, 20, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (US 6540329) and Wyble (US 6322187), and further in view of Suzuki (US 5734405).

Kaneko et al. and Wyble do not disclose:

Selecting between at least two print modes includes selecting one of said at least two print modes based on at least one parameter associated with said print media.

Suzuki discloses:

Selecting between at least two print modes includes selecting one of said at least two print modes based on at least one parameter associated with said print media (column 3, lines 41-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the methods of Kaneko et al. as modified with the disclosure of Suzuki in order to create a higher quality image and a printer with higher quality means of control.

Claims 30-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al. (US 6540329) in view of Matsubara (US 5488398).

Kaneko et al. discloses:

As per claim 30, a sequence in which two different inks are to be applied to a print media based on an amount of color associated with each of said at least two different liquid inks (column 9, lines 24-62 and column 27, line 1-column 28, line 57).

As per claim 32: an apparatus wherein the printing sequence establishes that a first one of said two different liquid inks having a first amount of colorant is to be applied to said print media prior to applying a second one of said at least two colorants having a second amount of colorant that is lower than said first amount of colorant (column 9, lines 24-62 and column 27, line 1-column 28, line 57).

As per claim 33: an apparatus wherein the printing sequence establishes that a first one of said two different liquid inks having a first amount of colorant is to be applied to said print media prior to applying a second one of said at least two colorants having a second amount of colorant that is higher than said first amount of colorant (column 9, lines 24-62 and column 27, line 1-column 28, line 57).

As per claim 35: said applicable portion is associated with a single pixel on said print media using at least two different liquid inks (figures 12A-12G).

As per claim 38: establishing print map when determining a printing sequence (figures 21A-21D).

As per claim 40: the printing mechanism in response to said print map individually applies each of said at least two different liquid inks to said print media during different printing passes (column 6, lines 25-44 and figures 12A-12E).

Kaneko et al. does not disclose:

As per claim 30: an apparatus comprising logic operatively configurable to determine a printing sequence.

As per claim 31: an apparatus wherein the logic is further operatively configurable to access source file data defining at least one object to be printed on said print media using said at least two different liquid inks.

As per claim 34: an apparatus wherein said printing sequences defines, when during at least two different printing passes, each of said at least two different liquid inks are to be applied to an applicable portion of the print media.

As per claim 35: a source file data defining at least one object to be printed.

As per claim 36: an apparatus wherein said logic is further configured to operatively consider at least one identifying parameter associated with at least one of two different liquid inks when determining said printing sequence.

As per claim 37: logic further configurable to operatively consider at least one identifying parameter associated with said print media when determining said printing sequence.

As per claim 39: a printing mechanism operatively coupled to said logic and configurable to receive print map data, and in response, sequentially apply said at least two different liquid inks to said print media according to said printing sequence (column 4, lines 14-45).

As per claim 41: logic is operatively configurable within a printing device.

As per claim 42: logic is operatively configurable within a printing device.

Matsubara discloses:

As per claim 30: an apparatus comprising logic operatively configurable to determine a printing sequence (column 4, lines 14-35).

As per claim 31: an apparatus wherein the logic is further operatively configurable to access source file data defining at least one object to be printed on said print media using said at least two different liquid inks (column 4, line 14-35)

As per claim 34: an apparatus wherein said printing sequences defines, when during at least two different printing passes, each of said at least two different liquid inks are to be applied to an applicable portion of the print media (column 4, lines 14-35).

As per claim 35: a source file data defining at least one object to be printed (column 4, lines 14-35).

As per claim 36: an apparatus wherein said logic is further configured to peratively consider at least one identifying parameter associated with at least one of two different liquid inks when determining said printing sequence (column 4, lines 7-12).

As per claim 37: logic further configurable to operatively consider at least one identifying parameter associated with said print media when determining said printing sequence (column 4, lines 7-12).

As per claim 41: logic is operatively configurable within a printing device (column 4, lines 14-45).

As per claim 42: logic is operatively configurable within a printing device (column 4, lines 14-45).


It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus taught by Kaneko et al. with the disclosure of Matsubara in order to create a higher quality printing apparatus with better controls.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

 6/23/06
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PRIMARY EXAMINER